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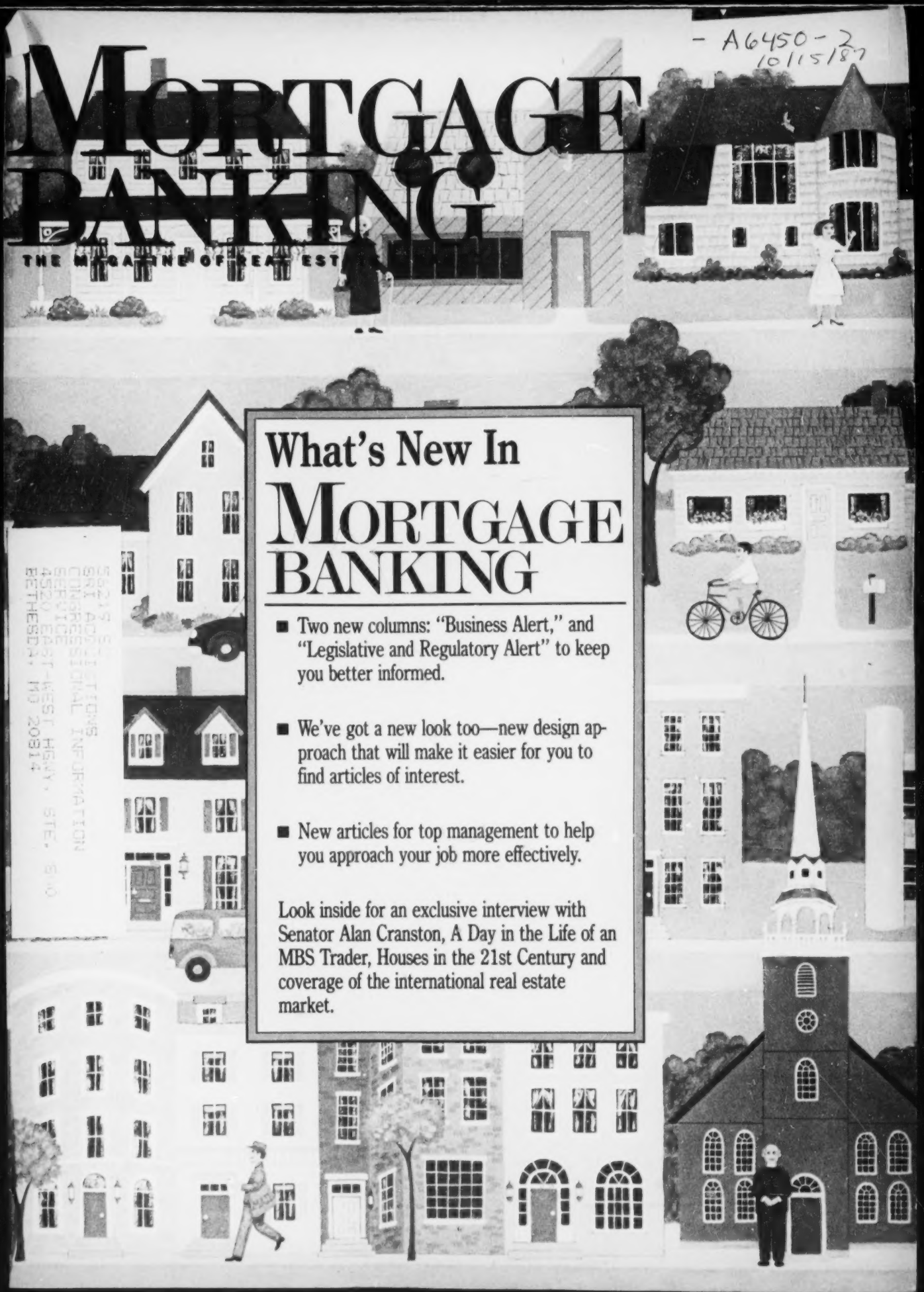
MORTGAGE BANKING

THE MAGAZINE OF REAL ESTATE



What's New In MORTGAGE BANKING

- Two new columns: "Business Alert," and "Legislative and Regulatory Alert" to keep you better informed.
- We've got a new look too—new design approach that will make it easier for you to find articles of interest.
- New articles for top management to help you approach your job more effectively.

Look inside for an exclusive interview with Senator Alan Cranston, A Day in the Life of an MBS Trader, Houses in the 21st Century and coverage of the international real estate market.

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VOLUME 48 NUMBER 1

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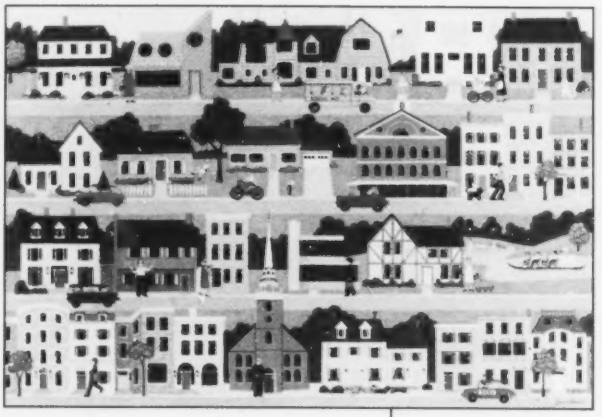
EDITORIAL PAGE



proved the aesthetics of the magazine in a way that makes it easier for you to find the articles you want.

So, as you peruse one of our regular features, such as "People" or "Secondary Mortgage Markets" or delve into one of our new additions, such as "Mortgage Products for all Palates," I bid you good reading.

Jane DeMarines
Senior Director of Public Affairs and Publications

THE ISSUE

Dear Reader:

Recognizing the need for change and harnessing its potential can mean the difference between success and failure in today's fast-paced financial environment. MORTGAGE BANKING has recognized the need for change and with this issue offers you a new look, is broader in scope, but, as always, contains solid articles that help you do your job better.

We believe this issue will help you harness change to your benefit with the addition of two new columns that summarize legislative and regulatory initiatives critical to shaping your spreadsheet and affecting your bottom line. We also are introducing a new series of monthly interviews with national leaders whose perspectives on compelling issues and financial matters we think you will find of interest. This month we talked to Senator Alan Cranston (D-CA), the driving force behind a renewed National Housing Policy.

In addition, we are introducing the beginning of what will be a continuing series of articles aimed at top management. This issue Felix Beck, Chairman of Margaretten & Company and a past MBA president, talks about leadership.

We are expanding the scope of MORTGAGE BANKING in another way, too. We will offer more articles about housing and finance that cover a broader range of topics. Be sure to read "Houses of the 21st Century" and "A Day in the Life of an MBS Trader." And don't miss two other articles that will help you to do your job better: "Prepayment Projections" and "How to Design a Human Resource Hierarchy."

We continue on the cutting edge of change with part two of our series on MBS residuals, as well as with three articles that follow the controversy of the loan commitment crisis. The latter detail new consumer laws and efforts by state lobbyists to deal effectively with legislators. One tells you how to make money; the others, how to cut your losses.

More Than A Pretty Face

MORTGAGE BANKING's changes are not all in the printed word, however. We offer a new look as well. We have always been a showcase for creative art and design, but with this issue we have im-

THE COVER

Since 1630, Boston has evolved into an international center for American finance, trade, culture, education, medicine and architecture. Where else could one find the homes of such historic figures as Paul Revere standing only a few short blocks from the glassed-walled towers that house some of the country's financial and industrial giants?

Mortgage bankers exhibit the same flexibility and resourcefulness that has enabled Boston to retain the best of the old while becoming a modern metropolis. It is particularly fitting, then, that MBA's convention will be held this year in a dynamic environment that embodies the diversity of those whom the association serves.

Margaret Yao
Editor

THE ARTIST

This month's cover of the architecture in Boston was painted by Joan Landis, a freelance artist who specializes in primitive style painting. Included among her favorite subjects to paint are family history series. Her works have appeared in *Saturday Evening Post, Redbook, Seventeen, Mother Earth* and *Ladies Home Journal*. She works with numerous corporations painting for their advertisements. Her medium is acrylic and she works out of a studio in New York City.

AND NEXT ISSUE

Multifamily Housing and the Role of the Federal Government

Low-Income Housing: an Element in the National Housing Policy

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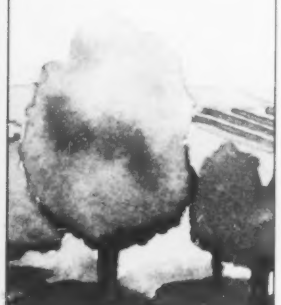

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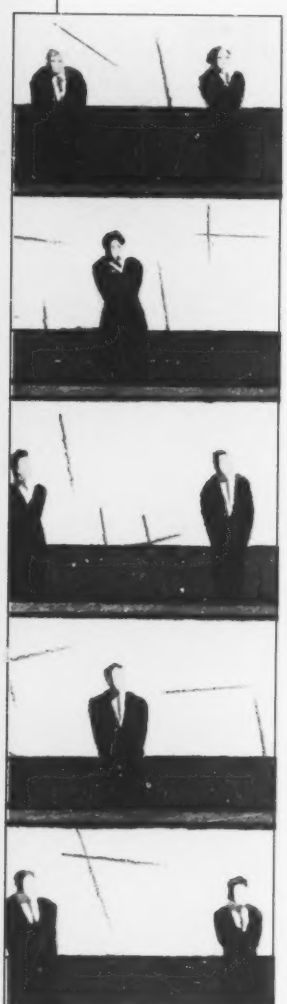

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PREPAYMENT PROJECTIONS

Prepayments occur because of home sales or refinancing. Using the turnover rate of single-family housing stock is a less complicated method to project prepayments.

Dr. Joseph C. Hu

Current prepayment rate projections for mortgage pass-throughs are generally derived from econometric models that incorporate option theory. Explanatory variables of the models often include weighted average age and the interest rate on the underlying mortgages, current market mortgage rates, housing prices, equity build-up in homes, and other housing and demographic factors. Conceptually, these quantitative models can produce a wide range of projections under various interest rate scenarios for numerous coupons and sectors (Ginnie Maes, Fannie Maes and Freddie Macs). These projections, however, are dependent entirely on assumptions about the future behavior of the explanatory variables. More important, these projections assume that the same institutional and housing finance environment that existed during the period studied will prevail in the future.

A less complicated method for projecting prepayment is to identify and forecast the turnover rate of the single-family housing stock. Prepayments typically occur for two reasons: home sales or refinancing. For seasoned mortgage pass-throughs with coupon rates of 10 percent and below (low coupon pass-throughs), housing activity almost dictates prepayments. There is a strong relationship between generic prepayments for low coupon pass-throughs and the turnover rate of the single-family housing stock. Extrapolating from this relationship, it is possible to project future prepayments based on a qualitative assessment of the outlook for housing activity. Because housing activity is expected to continue strong, prepayments for seasoned, low coupon pass-throughs are likely to remain near historically high levels in 1987.

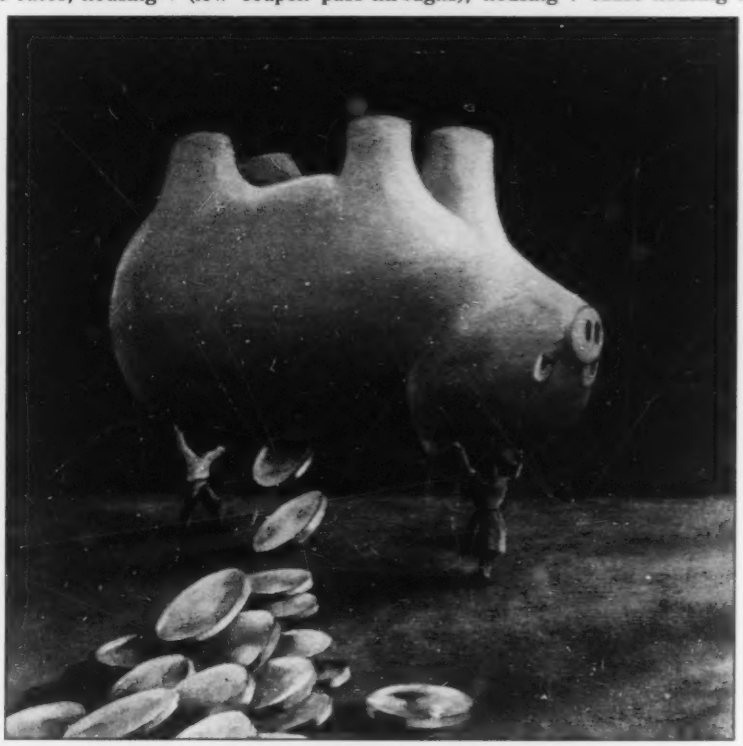


ILLUSTRATION BY MICHAEL GIBBS

The turnover rate for the single-family housing stock is defined as the ratio of sales of existing homes to the stock of single-family housing that is available for transaction (transaction housing stock). For example, 1983 sales of existing homes, as reported by the National Association of Realtors, were 2.7 million units (See Figure 1). The latest *Annual Hous-*

ing Survey, conducted jointly by the Commerce Department's Bureau of the Census and the Department of Housing and Urban Development, estimated the total single-family housing stock in 1983 at 61.4 million units. However, this number should be adjusted downward because there were only 43.5 million units of "specified, owner-occupied" single-family housing. As defined by the survey, these specified housing units are located on a lot of less than 10 acres with no business on the property. These units are most likely to be on the resale market and sold through Realtors. Nevertheless, the specified housing stock should be further adjusted downward because houses that have recently sold are less likely to be for sale again within a certain period. Thus, the transaction stock is computed by assuming that homeowners will normally stay in a new residence for at least two years before moving again. Consequently, subtracting the sales of existing homes during both the current and the previous year from the specified housing stock gives an estimate of 1983 transaction housing stock at 38.8 million units. The housing turnover rate for 1983, therefore, was 6.9 percent (see Figure 2).

While mortgage prepayments are primarily caused by home sales, they can also result from defaults and disaster (See Figure 2). If for any reason the mortgagor is unable to continue servicing the mortgage debt, the lender will eventually foreclose and sell the property, causing a prepayment. Statistics provided by the Federal Home Loan Bank Board indicate that annual default rates during the 1980s have increased steadily from 0.1 percent in 1980 to about 0.8 percent. In addition, a small fraction of the housing stock is constantly being destroyed, either by natural disaster or human events, causing more prepayments. The *Annual Housing Survey* reports that each year roughly 0.4 percent of the housing stock is permanently lost.

These projections assume that the same institutional and housing finance environment that existed during the period studied will prevail in the future.

FIGURE 1

Owner-Occupied Single-Family Housing Stock and Existing Home Sales, 1977–1987
(Millions of units)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[p]
Specified housing stock[1]	37.6	38.5	39.5	39.5	40.5	42.0	43.5	44.6	45.7	46.5	47.5
Adjustment factor[2]	6.5	7.7	7.8	6.8	5.4	4.4	4.7	5.6	6.1	6.7	7.3
Transaction housing stock[3]	31.1	30.8	31.7	32.7	35.1	37.6	38.8	39.0	39.6	39.8	40.2
Existing home sales	3.7	4.0	3.8	3.0	2.4	2.0	2.7	2.9	3.2	3.6	3.4

1. Single-family homes on less than 10 acres, without a business on the property; housing stocks for all years are estimated, except 1980 and 1983.
2. Specified housing stock minus sales of existing homes for the current and the previous year.
3. Specified housing stock minus adjustment factor.

p: projection

Sources: National Association of Realtors; Bureau of the Census, Department of Commerce; and Department of Housing and Urban Development, *Annual Housing Survey*.

FIGURE 2

Comparison of Alternative Prepayment Projection with Constant Prepayment Rates for Seasoned Low Coupon Pass-Throughs,* 1977-1987 (Percent)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[p]
Alternative prepayment projection											
Housing turnover rate	12.0	13.0	12.0	9.2	6.8	5.3	6.9	7.4	8.0	9.0	8.5
Default rate	0.1	0.1	0.1	0.1	0.2	0.6	0.6	0.7	0.8	0.9	0.8
Disaster rate	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total	12.6	13.6	12.6	9.7	7.4	6.3	7.9	8.5	9.6	10.3	9.7
Constant prepayment rate											
FHLMCs	—	—	—	—	—	3.5	6.2	7.0	7.9	12.0	11.0
FNMAs	—	—	—	—	—	4.7	6.2	6.4	7.1	11.4	10.5
GNMAs	12.8	11.6	10.3	3.3	1.4	1.5	3.2	2.9	3.9	7.4	6.5

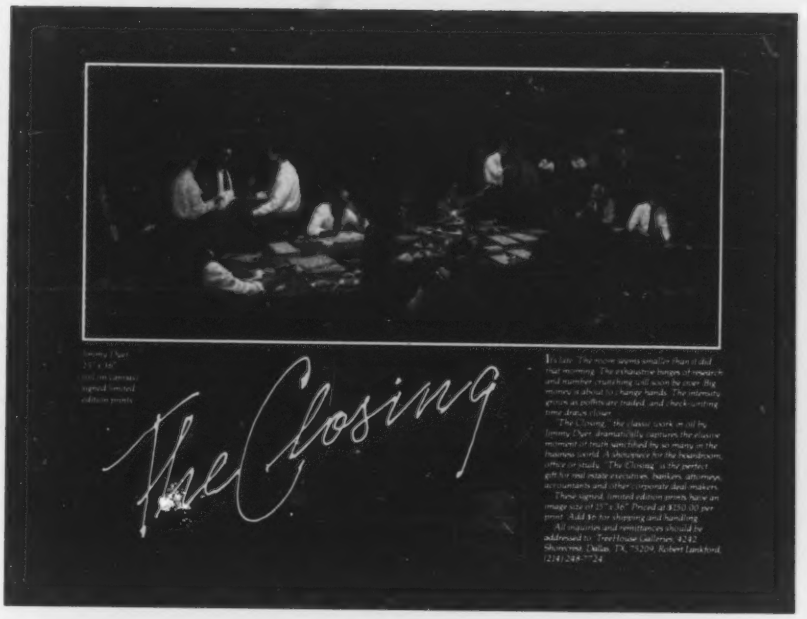
* Coupon rates 10% and below

p: projection

Sources: *Annual Housing Survey*; Shearson Lehman Mortgage Securities Group.

For seasoned, low coupon pass-throughs, prepayment rates can be approximated by summing turnover, default and disaster rates. The total of these rates—the alternative prepayment projection—can be compared with prepayment rates of low coupon Freddie Macs, Fannie Maes and Ginnie Maes for the period 1977 to 1986 (See Figure 2). (Because both the Freddie Mac guarantor and Fannie Mae mortgage-backed security programs were implemented in 1981, prepayments for Freddie Macs and Fannie Maes were not available until 1982.) Between 1977 and 1979 when housing activity was extremely strong, the alternative projection modestly overestimated Ginnie Mae prepayment rates. This difference can be explained by the Ginnie Mae's underlying FHA/VA mortgages which historically have financed only 20 percent of home purchases. Borrowers of Federal Housing Administration/Veterans Administration (FHA/VA) loans in general have significantly lower incomes and, therefore, are less mobile than borrowers of conventional loans that have financed the other 80 per-

A less complicated method for projecting prepayment is to identify and forecast the turnover rate of the single-family housing stock.



cent of home purchases. The prepayment rates on Ginnie Maes, therefore, were expectedly lower than the housing turnover rate.

During 1980 and 1983 the sum of housing factors overestimated prepayments by a wide margin. This discrepancy is probably due to the assumption of existing mortgages by homebuyers—a widespread practice in periods of high mortgage rates. During the early 1980s, historically high mortgage rates substantially slowed housing activity and reduced prepayments. Moreover, in that environment, there was strong incentive for sellers to provide financing to prospective buyers. One significant feature of this financing was the practice of sellers allowing buyers to assume the existing mortgage on the home. Consequently, a home sale was consummated without a mortgage prepayment further slowing prepayments. As mortgage rates dropped steadily after 1984, the reduced incentive of seller financing and more rigorous enforcement of due-on-sale enabled housing turnover rates to again closely approximate prepayments of seasoned, low rate mortgages.

For recent years, the alternative projection has improved as an estimator of prepayments. Between 1983 and 1985, the sum of the turnover, default and disaster rates was only moderately higher than prepayment rates. In particular, the housing turnover rate alone closely approximated prepayment rates for Freddie Macs and Fannie Maes although it still significantly overestimated prepayments for Ginnie Maes. However, using the rule of thumb that prepayments of Ginnie Maes are about one-half those of Freddie Macs and Fannie Maes, the housing turnover rate can still be a good indicator for Ginnie Mae prepayment rates. Incorporating the rule of thumb and considering that FHA/VA and conventional loans finance 20 percent and 80 percent of housing transactions, respectively, the 1986 alternative projection only slightly underestimated the prepayment rates for seasoned, low coupon pass-throughs. Finally, judging from the current levels of mortgage rates and housing affordability, housing activity is likely to be only slightly lower in 1987 than it was in 1986. Prepayments for low coupon pass-throughs, therefore, will remain close to historically high levels.

While future prepayment rates for seasoned pass-throughs will continue to be influenced heavily by housing activity, several institutional factors may cause their levels to edge up gradually. First, demographic demand for housing will remain strong—perhaps even stronger than in the past. The annual birth rate for the second half of the 20-year baby boom was 400,000 more than for the first half. These late baby boomers, now between 20 and 30 years old, have just begun to purchase their first homes. On the other hand, the early baby boomers have completed their first-time home buying and are ready to upgrade their housing. Housing finance permitting, the turnover of housing stock is likely to remain at high levels for the next five years or so. Also, the secondary mortgage market has expanded to include a broad base of investors and a wide variety of mortgage instruments. This expansion has greatly increased the funding sources for mortgages and reduced the fluctuation of housing activity due to changes in interest rates. Finally, the Tax Reform Act of 1986, which provides that only interest expenses from mortgages are deductible from taxable personal income, may increase prepayments caused by mortgage defaults. Because of the tax deductibility, homebuyers will want to borrow as much mortgage money as possible so that they can save cash for the purchase of other big ticket items. This incentive will raise the loan-to-value (LTV) ratio of new loans. Historically, high LTV ratios are closely associated with high defaults. □

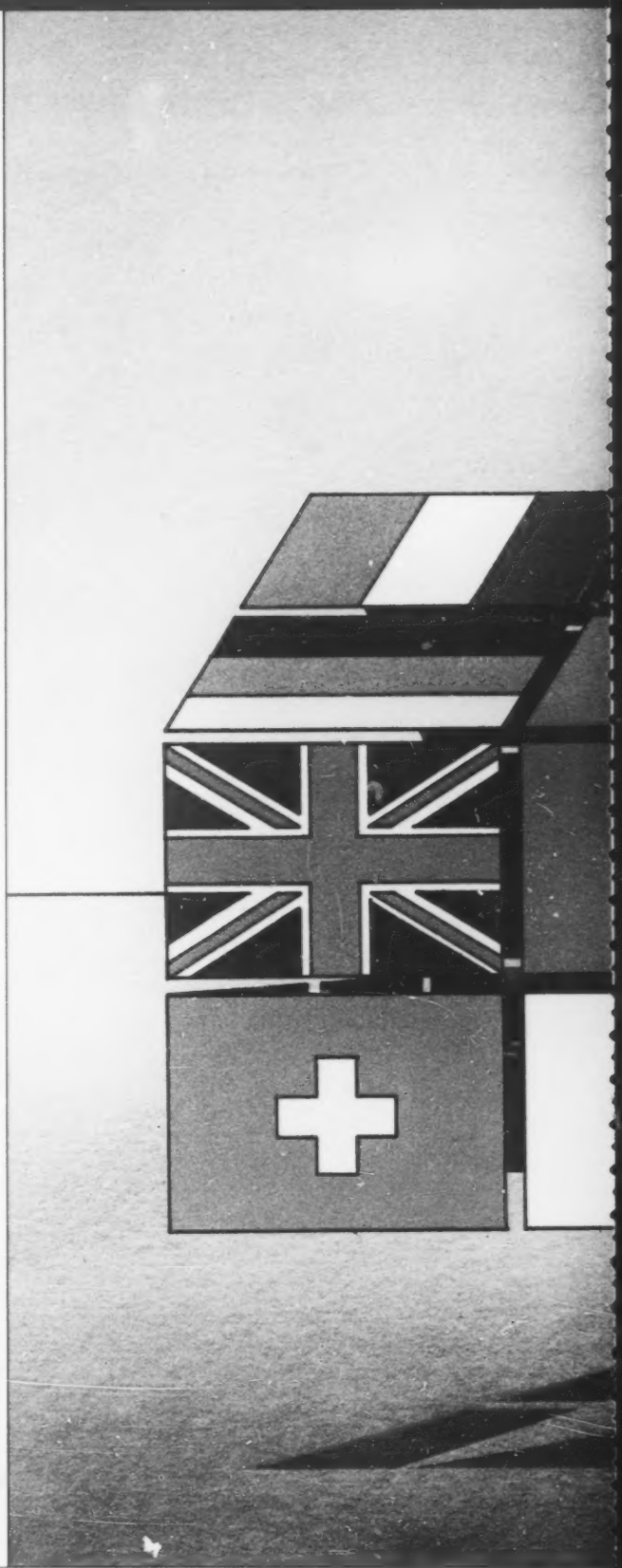
Dr. Joseph C. Hu is executive vice president, director of mortgage research at Shearson Lehman Brothers in New York City.

Foreign Infiltration

The Globalization of Real Estate

In Japan, the savings rate is about 23 percent of disposable income compared to 5 percent for American households. Read why Japan and other countries with high savings rates are plowing their capital into U.S. real estate.

John F. Tsui



The invasion of U.S. real estate markets by foreign investors has captured major headlines and its growing presence will be more pronounced within the next five to seven years.

Between 1980 and 1986, foreign investment in U.S. real estate jumped 400 percent compared to a 30 percent average annual rate of growth occurring during 1978-1981. According to the Department of Commerce, England, Germany, Canada, Netherlands and Japan are the five most active participants in the U.S. property market. Japan has replaced Canada and England as the leading source of foreign investment.

Foreigners are not only snapping up signature-type office buildings in downtown locations, but are also acquiring U.S. corporate stocks, Treasury notes and agricultural land.

In downtown Los Angeles alone, foreign investors own more than two-thirds of all major office buildings. Approximately 30 percent of downtown's office inventory are owned by Japanese institutional or private groups.

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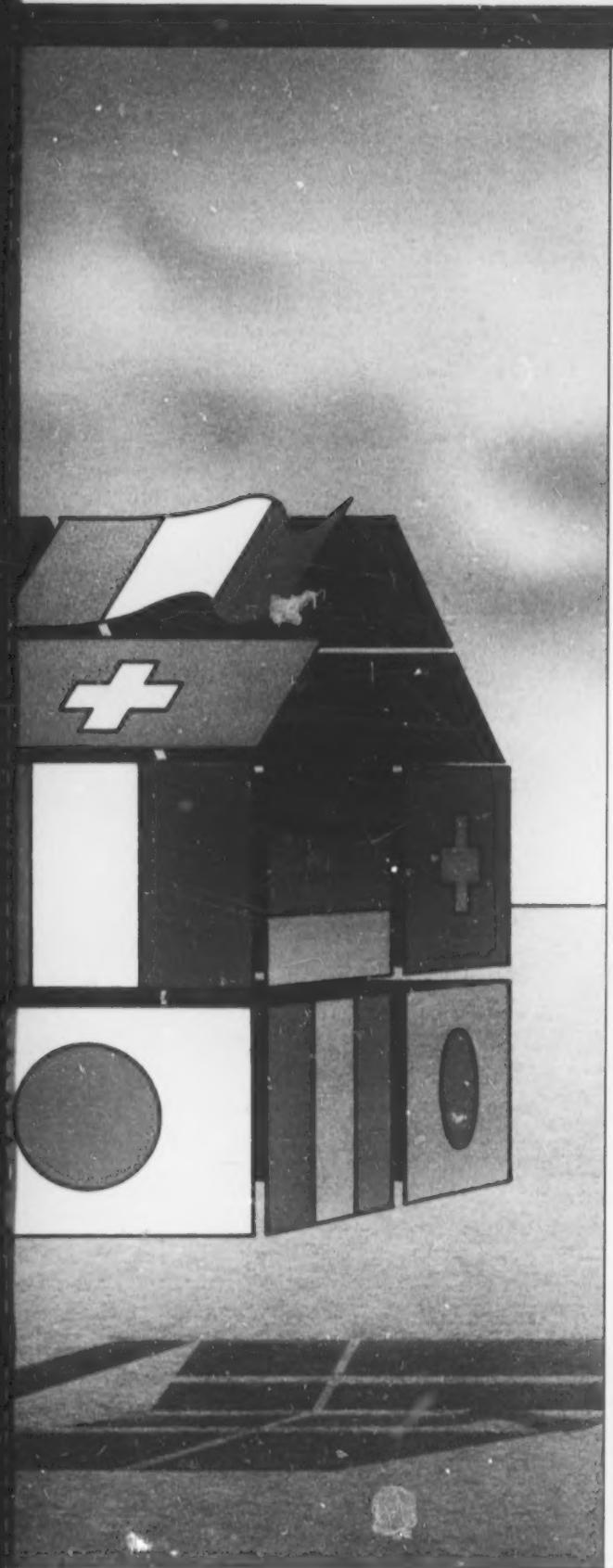


The World Market FOR Floating Rate CMOs

European and Japanese investors are buying American mortgage-backed securities and they are becoming an important investment product for the international sector.

Patricia M. Sherlock

Mortgage-backed securities have become an important investment product for the international sector. Similar to the rush of foreign buyers for domestic commercial real estate properties, U.S. agency mortgage-backed securities are being bought in the form of structured transactions by European and Japanese investors. The most popular instrument has been the floating rate collateralized mortgage obligations (FR CMOs).

Less than 12 months ago this was not the case. The Euromarket has historically been indifferent to mortgage-backed securities and the new derivative mortgage products. In September 1986, the Euromarket's position changed with the introduction of FR CMOs. The FR CMO product has revolutionized the CMO market. In 1987, more than 29 percent of the total CMO issuances have had floating rate classes (Table 1).

The general structure of CMOs

FR CMOs are a variation to the CMO structure. Every CMO bond class, regardless of the type of derivative feature, is basically a pay-through bond with different maturity classes supported by mortgage collateral. The mortgage collateral's cash flow is allocated in a priority sequence among the classes of bonds

Market *continued on page 147*

ILLUSTRATION BY STEPHEN BAUER

Global *continued from page 138*

The international expansion of financial services and the deregulation of the securities markets have pushed the domestic real estate industry into a wider global arena. This process has been further accelerated by telecommunications and computers.

What is also occurring in this globalization process is the integration of developed and developing national economies into a single global economy. Economic interdependence among nations is much more prevalent. America is no longer dependent upon what happens within the U.S. economy. Americans are now looking outward, especially across the Pacific, a shift away from our past inward orientation.

Another principal factor that favors foreign investment in the U.S. is the decrease of domestic competition from U.S. investors, especially the tax-driven syndicators.

Our current consumption and investment of more than we produce have resulted in substantial capital inflow into this country. Household savings rates in other developed countries are significantly higher than in the United States. In Japan, for example, the savings rate is about 23 percent of a person's disposable income, compared to 5 percent for American households. As a result, the high savings countries have been plowing their surplus capital into the United States and investing it into various financial and immovable assets.

The reasons behind the recent upward surge in foreign equity and debt capital into this country are:

- The U.S. is politically stable and the market is large and wealthy;
- There is the prospect of higher yields than can be expected in foreign countries, after accounting for currency exchange differentials;
- The decline in the U.S. dollar against other currencies has propelled many foreign investors to buy U.S. real estate;
- There is the lack of suitable and sufficient real estate investments in their homeland;
- Nominal interest rates in other industrialized nations are lower than those in the United States. Hence, leveraged yields on U.S. properties financed with foreign capital are higher than internal financing. Overseas investors are now able to pay premium prices for U.S. properties, or accept lower going-in yields, than U.S. investors.

Another principal factor that favors foreign investment in the U.S. is the decrease of domestic competition from U.S. investors, especially the tax-driven syndicators. The Tax Reform Act of 1986 has severely curtailed interests among syndicators to acquire properties for tax shelter purposes. In fact, a tax-oriented investor who acquired an office building prior to tax reform will experience a 30 percent drop in after-tax cash flow in 1987.

Real estate equity yields in the U.S. are notably higher than other nations. Unlike stocks and bonds, real estate hinges less on cyclical timing. Besides, foreigners prefer owning physical assets as opposed to financial assets because physical assets are harder to destroy in times of political upheaval or expropriation.

Properties in the U.S. are transferred much more often than in other countries. This creates a greater pool of properties from which to acquire and it also gives them greater property variety and location.

What does the future hold with respect to offshore investments in U.S. real estate? The impact is still relatively small in comparison with the enormous size of the U.S. property market. Their presence appears much greater than their actual purchases.

The premium prices that have been paid by Japanese buyers for center city properties have driven up assessed values and property taxes on surrounding properties. Some upward pressure on actual rents will likely occur offsetting the downward pressure exerted by overbuilding. Property yields will continue to drop to a point where it will no longer pay foreign investors to snap up office buildings or hotels at above-market prices. However, at this point and time, there is still a healthy yield spread to continue to practice global yield arbitrage.

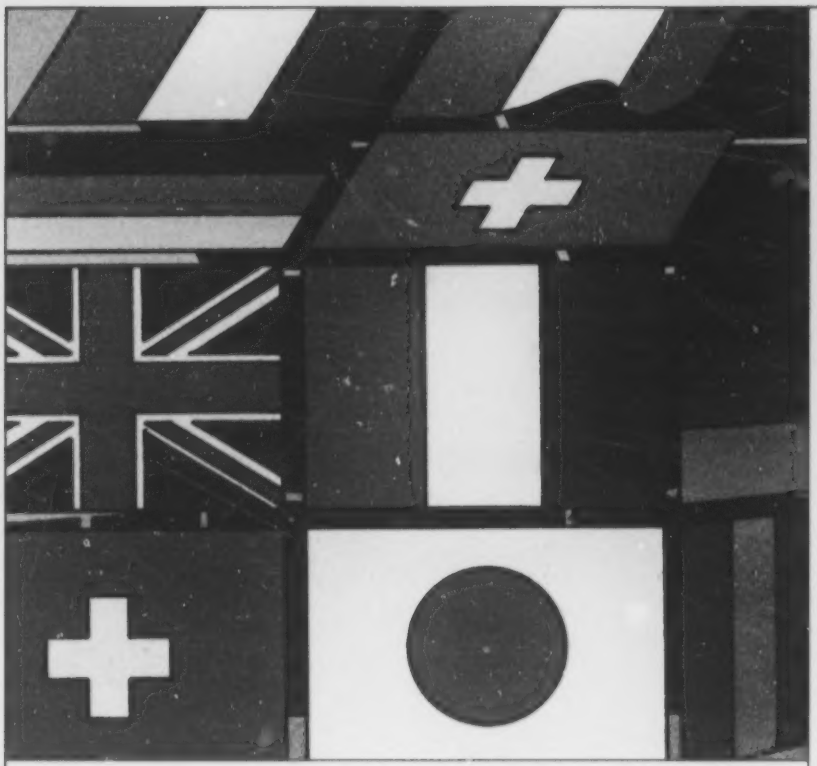
The revolution in property finance is also leading to new international dimensions. Domestic real estate lending is becoming more dependent on international financial conditions. Increasingly mega-real estate properties are being directly financed in foreign currency markets.

Foreign capital sources will undoubtedly play a more important and dominant role in the real estate finance industry. Japanese banks alone have made major inroads with respect to financing real estate projects. Some of the active participants include Long Term Credit Bank of Japan, Daiwa Bank, Sanwa Bank, Mitsubishi Bank, Bank of Tokyo Trust, Dai-Ichi Kangyo and Mitsui Bank. Other foreign banks that are active in real estate lending include Banque Indosuez, Banque Paribas, Bank of Montreal, Toronto Dominion, Deutsch Bank, Hong Kong Bank, Bank of East Asia, Barclays Bank, Marine Midland, and Credit Suisse.

Competitive pressure from large foreign banks to acquire U.S. banks and savings institutions will prevail as the process of merger and consolidation heightens. Foreign banks have acquired direct control of a number of small to medium-sized financial institutions. In fact, some of California's mid-sized banks are now owned by Pacific Rim investors or European interests.

On a global scale, the Japanese banks are ranked among the strongest both in terms of total assets and debt ratings. Of the top 10 banks in the world, six are Japanese-owned and all are triple-A rated. In fact, as one can see from Table 1, Citicorp is outranked by four Japanese banks.

The Japanese commercial banks are not only active in direct construction and permanent mortgage lending, but



also buy commercial properties through affiliated companies. These banks do not own investment properties.

During the past few years, the Japanese have captured a large share of the market for loan guarantees. Lower capital cost, lower fees and excellent long-term debt and commercial paper ratings are reasons contributing to their competitiveness. The Japanese banks have emerged as key participants in mortgage financing for existing and "to be built" commercial properties in the United States. Japan's current short-term prime rate is 3.6 percent and the long-term rate is 5.1 percent. The lower interest rate enables them to arrange yen-dominated financing at the 4 percent to 5 percent range. Thus, notwithstanding the currency exchange risk, the Japanese banks can earn a 2 percent to 3 percent spread based on 8 percent yield rates on U.S. property investments. The Japanese debt capital inflow will undoubtedly increase and this will occur at a greater intensity than in recent years.

In New York City alone, the Japanese have successfully arranged permanent loans and loan guarantees on major office buildings and hotels including the new American Express building, the Marriott Marquis in Times Square, and the recent refinancing of the Chrysler building.

Japanese banks' aggressive bidding and pricing policy have enabled them to outbid U.S. lenders for the mega-real estate projects. Rates on construction and permanent loans are usually ¼ to ½ point lower than those of U.S. banks. On a larger loan stretching over a seven- to ten-year period, a ¼ point differential can be a substantial savings for the borrower or developer.

The entry of foreign investors is certainly not limited to Japanese groups. Westfield holdings, Australia's largest shopping center developer, recently acquired three R.H. Macy's department stores for $364 million. In a separate transaction, Hooker acquired Allied Stores Corp.'s Bonwit Teller chain for $101 million and announced plans to expand the number of stores in five years from 13 to 28. Diversification has been Hooker's core strategy in the United States. Hooker's U.S. activity has grown to 30 percent of its overall profit and that is expected to increase to 50 percent in the next two years.

The buyout of American real estate firms by foreigners is becoming more prevalent. This has not yet occurred on any great extent, but it appears that the momentum toward this is intensifying.

The U.S. real estate industry stands to benefit more than to lose by the entry of offshore investors. Unlike the manufacturing and garment industry, real estate can only be produced here in the United States. Because this product is immovable, it clearly gives real estate an advantage over other products and services.

We are rapidly approaching an era characterized as the globalization of real estate, where real estate development and investment in this country reaches out worldwide. □

TABLE 1

Top 10 Banks in the World Ranked by Total Assets ($ Billions)

RANK	BANK	COUNTRY	ASSETS (12/31/85)	LONG-TERM DEBT
1.	Dai-Ichi Kangyo Bank Ltd.	Japan	$158.3	Aaa
2.	Fuji Bank Ltd.	Japan	142.7	Aaa
3.	Sumitomo Bank Ltd.	Japan	136.0	Aaa
4.	Mitsubishi Bank Ltd.	Japan	133.4	Aaa
5.	Citibank, NA	U.S.	129.5	Aa1
6.	Banque Nationale de Paris	France	123.8	Aaa
7.	Credit Agricole Mutual	France	123.6	—
8.	Sanwa Bank Ltd.	Japan	123.5	Aaa
9.	Credit Lyonnais	France	112.1	Aaa
10.	Norinchukin Bank	Japan	106.3	Aaa

Source: American Banker

John F. Tsui is president of New York-based Peninsula Realty Company, which conducts real estate appraisals of hotels, office buildings, and shopping centers, and is engaged in the placement of equity and mortgage financing through offshore institutions. He is the founder and managing director of the Asian Real Estate Association

Market *continued from page 139*

that compose the CMO. In a basic CMO, there are typically four tranches (or bond classes). Bonds in the first three tranches receive their coupon payments while the fourth tranche accrues interest. Principal paydown will go only to the designated first tranche. The remaining classes will receive principal in sequential order after the first tranche has been retired. The sequential principal paydowns will continue until the last tranche is paid off. CMOs are structured to generate sufficient cash flows to ensure the retirement of all the bonds.

FR CMO product features

Essentially, the FR CMO is a hybrid of the fixed-rate CMO and the Eurodollar floating rate note (EFRN). The EFRN is a debt instrument that is issued in the dollar denominated sector of the Eurobond market. The EFRN is one of several different types of floating rate notes with a coupon or interest rate that adjusts periodically due to changes in a base rate. Presently, EFRNs account for more than 50 percent of all new Eurodollar debt.

The key components incorporated into the fixed-rate CMO to make it look and act similar to the EFRN are the following:

- The bond coupon rate is indexed to the London Interbank Offered Rate (LIBOR). LIBOR is a short-term rate for period deposits. LIBOR is used as the reference rate because it represents the equilibrium price for global deposits. The LIBOR index is determined two days before the reset date by the CMO bond trustee who surveys four reference banks, averages the quoted rates and rounds to the nearest 1/16 of 1.0 percent.
- The LIBOR index and the bond payment frequency are usually matched. For example, a three-month LIBOR index will support a quarterly pay bond. Recently, there have been FR CMO transactions where the index and the reset frequency do not correspond: the monthly LIBOR index has been linked to a quarterly bond coupon reset frequency.
- The FR CMO coupons are reset at a fixed spread over the index rate. The range for the spreads has been 35 to 70 basis points. The spread is a function of the average life of the collateral, the type of collateral (Table 2), the credit quality of the issuer, the cap structure and the general financial market conditions.
- A FR CMO class must be capped at some rate due to the investment grading standards of the rating agencies. The rating agencies require a cap because the floating rate tranche is supported only by payments from fixed-rate mortgages. The cap ensures that the cash flows from the collateral will always be sufficient to meet the bond's interest payments. There are two types of FR CMO cap structures: step caps which are set initially and increase by a small increment each year and lifetime caps which are effective from issue through the life of the instrument. Lifetime caps represent the majority of issuances, with caps currently ranging from 11 percent to 13 percent.
- The FR CMO principal paydown structure may be sequential or in a pattern other than consecutive stated maturities. Frequently, the simultaneous pay floater class structure is utilized where principal is paid on two or more classes at a specified ratio. The ratio may be in unequal portions which can dramatically affect the investment returns of the bonds. For example, a FR CMO low coupon tranche that receives a large percentage of the principal payment will provide a superior return performance over a comparable discount mortgage-backed security under decreasing interest rates.

While the FR CMO is a hybrid structure, it is primarily a mortgage instrument. As a result, there are several important distinctions between EFRNs and FR CMOs.

Differences: EFRNs and FR CMOs

While the FR CMO is a hybrid structure, it is primarily a mortgage instrument. As a result, there are several important distinctions between EFRNs and FR CMOs:

EFRNs do not have supporting collateral and for this reason do not depend on cash flows from any specific assets. FR CMOs are supported by the cash flows of mortgages and, therefore, are tied to the mortgage market. The investor purchases a bond that is driven by the rate of prepayments. Although FR CMOs are typically priced at or close to par, the rate of prepayments can alter the average life of the bonds. Average life calculations are critical in determining the yield used for pricing.

EFRNs pay interest immediately at the end period. A standard feature in a CMO is a delay in the timing of the bond's interest payments. The delay factor is a function of when payments from the collateral are passed through to the investor. The effect of the delay

TABLE 1

FR CMO Highlights January–June 1987

	Percentage of Transactions	
■ 30-year mortgages as underlying collateral	92%	
■ 15-year mortgages as underlying collateral	8%	
■ Placement of FR tranche		
1	63%	
2	35%	
Other	2%	
■ Index		
1-month LIBOR	8%	
3-month LIBOR	92%	
■ Quarterly pay bond	98%	
non-quarterly	2%	
■ Average cap	12%	
■ Average margin	56	basis points
■ Average maturity	325	months

TABLE 2

FR CMO Collateral Breakdown

Jan–June 1987 (b = billions of $)

Whole Loans $.048b (0.5%)

Fannie Mae $2.1b (20.1%)

Freddie Mac $4.1b (39.2%)

Ginnie Mae $4.2b (40.2%)

is that interest is not accruing between the end of the coupon period and the actual payment date. Recently, FR CMOs have been structured to eliminate the delay problem. In 1987, there has been only one FR CMO transaction where delay was included in the structure. The removal of the delay has been accomplished by various structural enhancements: the establishment of a reserve, overcollateralization, the use of deferred interest bonds, and the inclusion of premium collateral to support the bonds.

EFRNs use the actual/360-day basis accounting method—The interest accrual method used for mortgages is the standard 12 30-day months. This method eliminates an investor's opportunity to potentially earn an extra five to six days of interest in a calendar year. While a majority of FR CMOs have conformed to the 30/360 accounting system, a few FR CMOs have used the actual days method.

EFRNs are quoted on a yield to maturity basis—The quoted yield convention for FR CMOs is the corporate bond equivalent (CBE). The CBE translates the monthly mortgage cash flows into a yield equivalent for a quarterly semiannual payout.

Issuer's viewpoint

Although issuer's financial objectives vary in structured transactions, the issuers have identified two significant problems concerning fixed-rate CMOs:

- The cost of funds for issuance was too expensive.
- The performance of the fixed-rate residual needed improvement.

The issuer's cost of funds is reflected in the rate that the bond class is sold and the expenses incurred. The FR CMO's issuance cost is lower than the fixed-rate CMO in a positively sloped yield curve environment because it is priced off the LIBOR index which is at the low end of the yield curve. The lower end of the yield curve translates into a higher selling price for the FR CMO and in turn reduces the issuance cost. Table 3 illustrates the bond coupon cost differences between an actual fixed-rate CMO and a FR CMO transaction issued the same day.

TABLE 3

	Fixed-Rate CMO	FR CMO
Weighted Average Coupon	8.48	8.125
Stated Maturity	11/1/02	11/1/03
Average Life	5.40	5.09
Spread	+165 bp off Treasury	+55 bp off LIBOR
CMO Bond Coupon	8.75%	7.61%

A comparison of the fixed-rate CMO with the FR CMO shows a sizable difference in the two transactions—114 basis points (8.75 percent–7.61 percent). From the issuer's standpoint the difference is significant and reduces the return on the transaction.

From January to May 1987, mortgage bankers have issued $2.3 billion publicly offered CMOs and represent the third largest producer behind investment bankers and home builders.

The issuer's other problem with a fixed-rate CMO is the performance of the residual. A residual investment represents any excess cash flow which is not required for retiring the CMO's bond classes. For the issuer the residual is the primary incentive to do a CMO transaction. The sale of the residual, whether in a private placement or as a publicly registered class, determines the profit in a CMO. As a result, the residual must be attractive for investors to purchase it. The projected investment performance of a CMO residual is a function of the underlying collateral, the structural design of the tranches, the administrative expenses during the life of a CMO and the short-term reinvestment rates. Typically, the fixed-rate CMO produces bearish residuals. A bearish residual is at its best when interest rates increase and prepayments decrease because the holder of the residual investment will receive a wider spread for a longer length of time. The bearish residual performs inversely to most fixed income securities which operate optimally in a falling rate environment.

The FR CMO, however, creates a residual investment which is appropriate for investors who seek superior returns and limited downside risk. The FR CMO residual's performance characteristics correspond to whether a structure is a combination of fixed and floating rate tranches or 100 percent floating rate tranches. The majority of FR CMOs' issuances are a combination of fixed and floating rate tranches that generate a residual which exhibits high returns under relatively stable interest rate environments. If there are dramatic shifts in interest rates, the performance of the FR CMO residual declines. As a result of the FR CMO's residual performance, investors are attracted to the opportunity for superior returns if interest rates do not shift upward or downward dramatically. Unlike the bearish fixed-rate residual, a FR CMO residual does not offer the investor substantial upside, but it does produce high returns if interest rates remain within a stable range.

For the issuer who desires to sell the residual in a CMO transaction, the FR CMO presents an important alternative set of cost and performance measures.

Investor's viewpoint

Investors' financial goals cannot be easily categorized. Notwithstanding that value is determined individually, investors have raised two issues regarding the fixed-rate CMO:

- Greater price stability.
- A more flexible liability management product.

Domestic and international investors have had a tendency to shy away from mortgage-backed securities due to the uncertainty of yield and average life. With the development of the fixed-rate CMO, an attempt had been made to provide a limited form of call protection to the investor. The CMO structure generates limited call protection by reducing somewhat the reinvestment risk linked with the early paydown of the underlying mortgages. It does not, however, remove all the pricing risks.

continued

The FR CMO attempts to lessen the pricing risk by linking the bond payments with changes in the level of the underlying index subject to the potential limiting effects of hitting the caps. The pricing protection offered to the investor is a cash flow that is at a market rate. In a bear market, the average life lengthens but the coupon will be reset at a higher rate and the investor will receive greater coupon income. For many investors, this type of cash flow is so important that they prefer the FR CMO bond to the fixed-rate CMO which normally has higher yields.

The second issue for investors is liability management. Many portfolio managers constantly reconstruct their liabilities in an effort to lower their all-in-cost of funds. The FR CMO is attractive for those investors who desire to match their liability payments with an instrument that has a hefty spread (generally 55 basis points) over a cost of funds that parallels LIBOR's movement. The FR CMO presents the investor with an opportunity to arbitrage against their funding costs with limited downside risk. Additionally, if the investor is uncertain or anticipates a rise in interest rates, the FR CMO offers a defensive strategy with an ability to preserve capital and offset other potential fixed income losses. Overall, to the investor with a match funding viewpoint, the FR CMO provides an inherent hedge to their liability stream.

REMIC

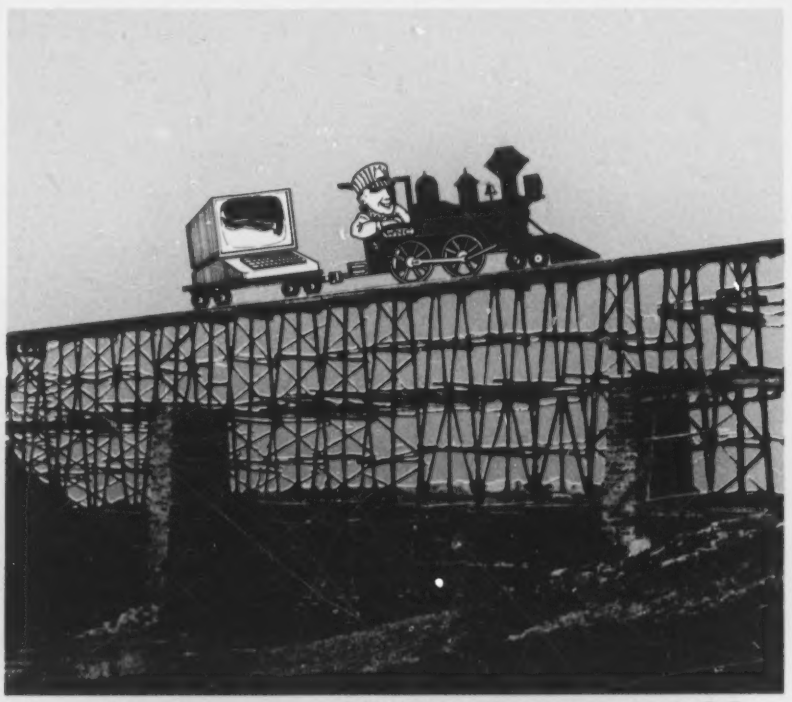
The Real Estate Mortgage Investment Conduit (REMIC) legislation did not initially include floating rate instruments as an approved product. Effective June 15, 1987, the Internal Revenue Service (IRS Bulletin 1987-24) established the guidelines for floating rate regular interests. Although FR CMOs have been a sizable percentage of the CMO market prior to the IRS's ruling, more than 60 percent of the CMO issuances since the announcement have been REMIC FR CMOs.

Future

From January to May 1987, mortgage bankers have issued $2.3 billion publicly offered CMOs and represent the third largest producer behind investment bankers and home builders. The mortgage bankers' issuances have been twice the rate of the fourth-place thrifts. This year, CMO production by mortgage banking firms is on track to be another volume record breaker.

The FR CMO, a new derivative of the basic CMO, offers an excellent opportunity for mortgage bankers to issue an arbitrage transaction and elect to sell the residual or retain it for hedging purposes. Recently, Lomas & Nettleton, one of the largest mortgage bankers, brought to market a $100 million arbitrage FR CMO. L & N's FR CMO exemplifies the type of mortgage finance transaction which mortgage bankers will increasingly select to issue because of its lower cost structure and superior residual performance. □

Patricia M. Sherlock is vice president for Donaldson, Lufkin & Jenrette Securities Corporation in New York City. She is responsible for mortgage product development and marketing. She is an adjunct professor at New York University's Real Estate Institute and lectures on mortgage pipeline management.



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MORTGAGE MARKET TRENDS

Current signs of strength in the industrial sector suggest renewed vigor in the overall economy in the months ahead. Real GNP, after rising at a 2.3 percent annual rate in the second quarter, will probably grow at around a 3 percent annual rate in the third quarter. By year-end and into 1988, the annual growth rate of real GNP could rise above 3 percent in the absence of tightening activities by the Federal Reserve.

A substantial decline in the foreign exchange value of the dollar has dramatically improved the competitive position of U.S. manufacturers, both domestically and overseas, since the third quarter of 1986. For the nine months ending in June, real GNP grew at an average annual rate of 2.7 percent, with increases in real net exports of goods and services accounting for a full 1 percentage point of that growth. During this period, the physical volume of non-farm exports rose at an annual rate of 12 percent, while the volume of non-oil imports increased only at an annual rate of 2½ percent. Although the U.S. merchandise trade deficit was reported to have widened to $15.7 billion in June and $16.5 billion in July, from $14.0 billion in May, these monthly data are extremely volatile. Moreover, these data are neither seasonally adjusted nor do they account for relative changes in prices. It is quite likely that the increased activity noticed in the industrial sector is in large due to a more favorable position of U.S. manufacturers vis-a-vis foreign competition.

Growing economy

Evidence continues to mount that the economy, led by manufacturing, is growing briskly. In August, total non-farm payroll employment rose by 156,000 following a gain of 296,000 jobs in July. The average monthly increase in jobs for these two months is more than double the average increase for May and June. Furthermore, despite a decline since June of 9,000 jobs in the manufacture of autos, there has been an increase of 86,000 in overall manufacturing employment. Industrial production posted a sharp advance in July, up 0.8 percent, following revised increases of 0.7 percent in May and 0.4 percent in June. Since April, industrial production has increased at an annual rate of 7¾ percent, compared to just under a 3 percent annual rate of growth in the February to April period.

Healthy gains in industrial output can be expected to continue for some time, judging by changes in the current backlog of unfilled orders for durable goods. An increase of 1.4 percent in unfilled durable goods orders in July followed a 1.3 percent increase in June. Unfilled orders for durable goods have increased at over a 15 percent annual rate from March to July.

Even with anticipated cutbacks in third quarter auto production, this allows for further growth in durable goods production in the months ahead.

Consumer spending has shown modest strength in the past few months. After rising at about a 5 percent annual rate in the March to May period, in the May to July period personal expenditures rose at an 11 percent annual rate. Although modest gains in personal income and savings will probably limit the growth of consumer purchases, consumer spending should nevertheless make a contribution to real GNP growth in the near term.

Despite the acceleration of activity in the past few months, inflation has moderated from the pace of earlier this year. Consumer price increases, after averaging over 0.4 percent per month in the first six months of the year, increased only 0.2 percent in July. Moreover, producer prices for finished goods also rose only 0.2 percent in both June and July and were unchanged in August, despite sizeable increases in energy prices in each of these months.

Rates

The positive news on inflation has had little positive effect on interest rates. Fears of future inflation have simmered for several months in the credit markets, and early in September the Federal Reserve raised the discount rate 50 basis points to 6.0 percent, and this was followed by increases in both the prime bank lending rate and the maximum rate on Veterans Administration (VA) guaranteed mortgages. Yields on 30-year government bonds are now around 9½ percent, the highest rate since January 1986, and 2 percentage points above last February's levels. To a large degree, increases in long-term interest rates this year have been associated with weakness in the exchange value of the dollar.

To be sure, increases in rates on 30-year fixed-rate mortgages, currently hovering between 10.8 and 11 percent, have restricted activity in housing markets. From May through July new home sales averaged 650,000 units per month, down 75,000 units from the January to April pace. With further interest rate increases expected over the next 12 to 18 months, stemming partly from Federal Reserve tightening actions to avoid a renewal of inflationary pressures, further decreases in housing market activity seem inevitable.

Gregory D. Luetscher
Economist
September 11, 1987

HOUSING ACTIVITY

RESIDENTIAL STRUCTURES, BY UNIT TYPE

(Units in thousands)

YEAR AND MONTH	HOUSING STARTS						PERMITS 17,000 ISSUING PLACES					
	Actual			Seasonally Adjusted Annual Rates			Actual			Seasonally Adjusted Annual Rates		
	Total	1-4 Units	5+ Units	Total	1-4 Units	5+ Units	Total	1-4 Units	5+ Units	Total	1-4 Units	5+ Units
1987												
FEB	103	76	27	1,838	1,379	459	101	76	25	1,676	1,313	363
MAR	141	107	34	1,730	1,296	434	150	109	41	1,719	1,244	475
APR	159	124	35	1,643	1,275	368	157	117	40	1,598	1,152	446
MAY	158	120	38	1,606	1,197	409	136	104	32	1,493	1,100	393
JUN	165	123	42	1,597	1,183	414	156	118	38	1,517	1,124	393
JUL$_p$	**155**	**120**	**35**	**1,611**	**1,222**	**389**	**141**	**104**	**37**	**1,488**	**1,079**	**409**
1986 TOTAL	1,806	1,263	543				1,769	1,185	584			
1985 TOTAL	1,742	1,166	576				1,733	1,077	657			
7 MONTHS												
1987	986	746	240				947	701	246			
1986	1,104	767	337				1,075	723	353			
1985	1,014	696	318				1,002	631	371			
1984	1,076	741	335				1,041	685	356			

RESIDENTIAL STRUCTURES BY REGION

(Units in thousands)

YEAR AND MONTH	STARTS								PERMITS 17,000 ISSUING PLACES							
	Actual				Seasonally Adjusted Annual Rates				Actual				Seasonally Adjusted Annual Rates			
	North East	Mid-West	South	West	North East	Mid-West	South	West	North East	Mid-West	South	West	North East	Mid-West	South	West
1987																
FEB	10	14	45	34	291	371	675	501	15	16	43	27	319	388	577	392
MAR	22	24	57	40	296	348	616	470	25	26	60	41	317	335	624	443
APR	26	28	66	40	272	305	665	401	27	32	58	41	290	305	588	415
MAY	28	28	60	37	297	309	623	377	26	28	50	33	274	284	575	360
JUN	29	29	56	43	264	293	604	436	29	29	59	40	276	266	605	370
JUL$_p$	**29**	**29**	**58**	**43**	**288**	**247**	**639**	**437**	**28**	**26**	**49**	**38**	**282**	**252**	**550**	**404**
1986 TOTAL	294	296	733	484					283	290	687	510				
1985 TOTAL	252	240	782	468					260	237	753	484				
7 MONTHS																
1987	159	176	385	266					165	170	360	251				
1986	162	172	470	300					162	168	441	305				
1985	133	132	471	278					147	132	446	277				
1984	106	140	556	275					110	124	516	291				

HOUSING ACTIVITY (Cont'd.)

YEAR AND MONTH	HOUSING SALES (Units in thousands) EXISTING HOUSES[1]	NEW HOMES Sold	NEW HOMES Available For Sale	NEW HOMES Months Supply at Current Rate	VALUE OF NEW CONSTRUCTION PUT IN PLACE (Dollars in billions) Seasonally Adjusted Annual Rate Total	1 Unit	2+ Units	Non-res.	CONSTRUCTION STATUS (Units in thousands) Seasonally Adjusted Annual Rate Under Construction Total	1-4 Units	5+ Units	Completions Total	1-4 Units	5+ Units
1987														
FEB	241	59	358	6.1	224.5	108.5	28.4	87.6	1,096	669	427	118	78	40
MAR	325	73	352	6.0	225.9	112.0	27.5	86.4	1,085	669	416	127	86	41
APR	331	72	355	5.9	224.7	112.8	27.0	84.9	1,070	675	395	135	94	41
MAY	346	61	353	6.8	228.2	112.8	26.6	88.8	1,061	670	391	131	94	37
JUN	361	59	360	6.8	221.7	113.5	24.9	83.3	1,062	674	390	147	108	39
JUL$_p$	**n.a.**	**54**	**361**	**6.7**	**221.1**	**115.0**	**24.7**	**81.4**	**1,063**	**681**	**381**	**140**	**99**	**41**
1986 TOTAL	3,565	749										1,756	1,206	550
1985 TOTAL	3,214	688										1,704	1,170	534
7 MONTHS														
1987	n.a.	431										933	648	285
1986	2,048	486										930	629	301
1985	1,832	416										902	612	290
1984	1,761	403										675	494	181

LENDER ACTIVITY

LONG-TERM MORTGAGE LOANS CLOSED

By Type of Institution and By Unit Type

(Dollars in millions)

YEAR AND MONTH	TOTAL Total	TOTAL Mtg. Bankers[9]	TOTAL S&Ls	TOTAL Banks[2]	TOTAL Life Cos.	1-4 UNITS Total	1-4 UNITS Mtg. Bankers[9]	1-4 UNITS S&Ls	1-4 UNITS Banks[2]	1-4 UNITS Life Cos.
1986										
OCT	$56,285	$12,659	$20,760	$19,781	$3,085	$41,901	$11,535	$16,992	$12,985	$389
NOV	52,157	12,703	16,813	18,141	4,500	37,493	12,136	13,634	11,307	416
DEC	74,941	14,615	26,639	27,478	6,209	47,459	13,148	19,298	14,720	293
1987										
JAN	42,804	9,748	12,888	18,641	1,527	31,421	8,791	10,477	11,932	221
FEB	44,756	10,518	13,128	19,103	2,007	31,486	10,012	10,773	10,534	167
MAR$_p$	**55,498**	**14,311**	**17,994**	**20,960**	**2,233**	**40,433**	**13,876**	**15,061**	**11,357**	**139**
1986 TOTAL	603,948	142,884	218,118	205,503	37,443	438,441	131,628	176,063	126,936	3,814
1985 TOTAL	369,343	68,065	145,372	127,873	28,033	241,474	62,658	109,286	68,224	1,306
3 MONTHS										
1987	143,093	34,577	44,045	58,704	5,767	103,340	32,679	36,311	33,823	527
1986	89,478	20,413	34,180	29,159	5,726	61,093	18,628	26,398	15,493	574
1985	66,722	12,621	26,703	23,026	4,372	42,999	11,594	19,227	11,985	193
1984	65,427	13,947	25,697	22,966	2,817	44,430	13,038	18,977	12,240	175

LENDER ACTIVITY (Cont'd.)

LONG-TERM LOANS CLOSED (Cont'd.)

(Dollars in millions)

YEAR AND MONTH	5+ UNITS					NONRESIDENTIAL				
	Total	Mtg. Bankers[9]	S&Ls	Banks[2]	Life Cos.	Total	Mtg. Bankers[9]	S&Ls	Banks[2]	Life Cos.
1986										
OCT	$3,560	$735	$1,933	$735	$157	$10,824	$389	$1,835	$6,061	$2,539
NOV	2,661	190	1,537	576	358	12,003	377	1,642	6,258	3,726
DEC	6,753	919	3,629	1,677	528	20,729	548	3,712	11,081	5,388
1987										
JAN	2,878	529	1,340	877	132	8,545	428	1,111	5,832	1,174
FEB	2,659	222	1,144	1,053	240	10,606	284	1,206	7,516	1,600
MAR$_p$	**2,751**	**71**	**1,421**	**1,004**	**255**	**12,314**	**364**	**1,512**	**8,599**	**1,839**
3 MONTHS										
1987	8,289	822	3,905	2,935	627	31,464	1,076	3,829	21,946	4,613
1986	6,598	709	3,595	1,678	616	21,603	892	4,187	11,988	4,536
1985	5,079	584	2,776	1,307	412	18,644	443	4,700	9,734	3,767
1984	4,798	172	2,729	1,609	288	16,199	737	3,991	9,117	2,354

LONG-TERM COMMITMENT ACTIVITY

By Type of Institution

(Dollars in millions)

YEAR AND MONTH	ISSUED DURING MONTH					OUTSTANDING				
	Total	Mtg. Bankers[9]	S&Ls	Banks[2]	Life Cos.	Total	Mtg. Bankers[9]	S&Ls	Banks[2]	Life Cos.
1986										
OCT	$43,470	$8,959	$19,202	$12,593	$2,716	$138,510	$17,784	$49,878	$51,605	$19,243
NOV	35,692	8,263	17,111	7,554	2,764	129,903	20,974	48,994	40,726	19,209
DEC	43,851	13,033	19,548	7,979	3,291	124,310	23,189	43,014	41,809	16,298
1987										
JAN	29,161	7,044	13,718	6,674	1,725	116,876	18,703	40,419	41,594	16,160
FEB	34,440	10,941	11,585	9,599	2,315	137,570	20,664	49,401	51,121	16,384
MAR$_p$	**48,848**	**12,078**	**23,671**	**9,974**	**3,125**	**135,835**	**20,110**	**52,366**	**47,241**	**16,118**
1986 TOTAL	527,397	128,480	231,915	127,902	39,100					
1985 TOTAL	324,089	59,551	170,755	61,311	32,472					
3 MONTHS										
1987	112,496	30,063	48,974	26,294	7,165					
1986	102,354	30,315	44,607	17,896	9,536					
1985	60,261	9,966	33,988	8,946	7,361					
1984	61,573	12,569	32,604	10,884	5,516					

MORTGAGE INSURANCE

(Units in thousands, Dollars in millions)

YEAR AND MONTH	APPLICATIONS RECEIVED (Units)				LOANS INSURED							
	Total	FHA[3]	VA	Private	Total		FHA(203)		VA		Private	
					Units	Amt.	Units	Amt.	Units	Amt.	Units	Amt.
1987												
FEB	243	153	42	48	167	11,525	90	5,458	44	3,255	33	2,812
MAR	307	190	49	68	247	16,893	148	9,134	60	4,420	39	3,339
APR	285	165	41	79	227	15,768	142	8,947	41	3,021	44	3,800
MAY	216	104	38	74	230	15,838	149	9,265	36	2,622	45	3,951
JUN	212	93	43	76	219	15,501	120	7,502	47	3,424	52	4,575
JUL$_p$	**192**	**88**	**37**	**67**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**41**	**2,979**	**52**	**4,566**
1986 TOTAL	3,283	1,908	452	923	1,852	127,759	921	56,901	345	24,720	586	46,138
1985 TOTAL	2,194	902	251	1,041	1,333	87,485	410	23,964	192	13,046	731	50,475
7 MONTHS												
1987	1,663	913	291	459	n.a.	n.a.	n.a.	n.a.	307	22,439	307	26,605
1986	2,078	1,229	243	536	859	59,617	387	23,957	161	11,547	311	24,113
1985	1,231	490	122	619	675	44,004	159	9,147	94	6,293	422	28,537
1984	1,127	253	121	753	843	54,208	138	7,369	133	8,581	572	38,258

SECONDARY MARKET ACTIVITY

(Dollars in millions)

YEAR AND MONTH	FNMA Portfolio Comm.	FNMA Portfolio Purc.	FNMA Mortgage-Backed Securities Outstanding	FNMA Mortgage-Backed Securities Issued	FHLMC* Comm. to Sell	FHLMC* Comm. to Buy	FHLMC* Mtg. Purc.	FHLMC* Mtg. Sold	GNMA Pass-Through Securities Applications	GNMA Pass-Through Securities Issued
1987										
FEB	$912	$979	$104,670	$4,691	$8,802	$7,990	$7,961	$7,844	$11,668	$9,692
MAR	2,805	1,435	107,673	4,627	9,385	14,314	9,394	9,145	10,873	10,736
APR	3,208	2,118	112,673	6,997	8,167	12,965	9,777	9,852	15,050	11,934
MAY	1,726	1,718	116,861	7,086	6,730	5,170	7,996	7,768	10,220	3,515
JUN	1,745	1,690	121,270	6,648	n.a.	n.a.	n.a.	n.a.	14,077	4,950
JUL$_p$	**2,373**	**1,569**	**125,461**	**5,842**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
1986 TOTAL	32,987	30,826	—	60,566	106,563	136,179	103,474	102,443	152,911	98,169
1985 TOTAL	20,225	19,848	—	23,649	44,085	46,762	44,012	44,085	64,360	45,868
7 MONTHS										
1987	13,717	10,855	—	42,254	40,539	48,442	43,078	42,824	n.a.	n.a.
1986	19,441	13,709	—	29,446	35,699	38,958	28,774	27,223	72,846	46,539
1985	12,001	12,797	—	9,726	18,019	19,181	14,468	13,737	33,225	21,747
1984	12,093	10,411	—	6,949	7,527	8,395	6,068	4,739	22,256	17,589

*Year-to-date totals are for five months only.

INTEREST RATES AND YIELDS

YEAR AND MONTH	1- to 4-UNIT MORTGAGES: FHA OPINION SURVEY: FHA New[4]	FHA OPINION SURVEY: CONVENTIONAL New	FHA OPINION SURVEY: CONVENTIONAL Existing	FHLBB SURVEY: CONVENTIONAL New	FHLBB SURVEY: CONVENTIONAL Existing	FNMA: 1 Yr. ARM (1%/Yr.)	FNMA: FRM Conv.	APARTMENTS[5]
1987								
MAR	8.94%	9.19%	9.20%	9.14%	9.09%	8.06%	8.663%	10.24%
APR	10.02	10.11	10.14	9.21	9.09	8.35	9.655	12.08
MAY	10.61	10.44	10.46	9.37	9.27	8.85	10.208	12.65
JUN	10.33	10.29	10.29	9.45	9.38	8.69	9.995	n.a.
JUL	10.38	10.22	10.23	9.44	9.43	8.45	9.773	n.a.
AUG$_p$	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**8.91**	**10.007**	**n.a.**

YEAR AND MONTH	CURRENT SECONDARY MARKET YIELDS: GNMA[6]	FNMA[6]	FHLMC[6]	SELECTED SECURITIES: A-Rated[7] Utility	U.S. Government 10-yr.	U.S. Government 26-wk.	Prime Comm. Paper 90-119 Days
1987							
MAR	8.12%	8.25%	8.22%	8.84%	7.75%	5.60%	6.16%
APR	9.06	9.13	9.08	9.51	8.02	5.90	6.45
MAY	9.76	9.62	9.59	10.05	8.61	6.05	6.93
JUN	9.69	9.70	9.65	10.05	8.40	5.99	6.92
JUL	9.62	9.64	9.59	10.17	8.45	5.86	6.65
AUG	**9.79**	**9.73**	**9.7**	**10.37**	**8.76**	**6.14**	**6.71**

YEAR AND MONTH	SPREADS (Basis Points): FHA New Minus A-Utility	GNMA Minus 10-Yr. Govt.	FNMA Minus 10-Yr. Govt.	FHLMC Minus 10-Yr. Govt.
1987				
MAR	10	87	100	97
APR	51	104	111	106
MAY	56	115	101	98
JUN	28	129	130	125
JUL	21	117	119	114
AUG	**n.a.**	**103**	**97**	**94**

NA—Not available. p—Preliminary.

[1] From the National Association of Realtors "Existing Home Sales" series.

[2] Mutual Savings Banks and Commercial Banks.

[3] FHA applications received includes the Direct Endorsement Program starting in 1984.

[4] Secondary market gross yields.

[5] Federal Home Loan Mortgage Corp. Existing Construction only.

[6] Securities for 0 to 30 day delivery.

[7] Prior to January 1984 this rate was for Aaa-rated New Issue Utility Bonds.

[8] Year-to-date seasonally adjusted series not calculated.

[9] 1985 data on mortgage bankers obtained from the HUD Survey of Mortgage Lending Activity.